PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q87264
Didier LACROIX, et al.	
Appln. No.: 10/529,912	Group Art Unit: 2617
Confirmation No.: 5416	Examiner: Naghmeh MEHRPOUR
Filed: June 1, 2005	

For: METHOD AND APPARATUS FOR MANAGING RADIO LINK INTERRUPTION IN A RADIO SHADOW ZONE

SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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Date: February 29, 2008

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Commissioner for Patents
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Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

Table of Contents

I. REAL PARTY IN INTEREST

The real party in interest is EVOLIUM S.A.S, the assignee of the present application.

The assignment was recorded on June 1, 2005, at Reel 016721, Frame 0572.

II. RELATED APPEALS AND INTERFERENCES

Upon information and belief, there are no other prior or pending appeals, interferences or judicial proceedings known to Appellant's Representative or the Assignee that may be related to, be directly affected by, or have a bearing on the Board's decision in the Appeal.

III. STATUS OF CLAIMS

Claims 1-13 are pending, have been rejected, and are subject of this appeal.

IV. STATUS OF AMENDMENTS

Appellant submitted an Amendment under 37 C.F.R. § 1.111 on March 6, 2006, which was entered. A Final Office Action was issued on November 6, 2006. Appellant submitted a request for reconsideration on February 6, 2007. A second Final Office Action was issued on April 30, 2007. Appellant filed a request for reconsideration on July 30, 2007. In the Advisory Action dated October 22, 2007, the Examiner disagreed with the Appellant's arguments. On October 30, 2007, Appellant filed a Notice of Appeal.

For the purposes of this Appeal, Appellant understands that all amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

A summary of the claimed subject matter, by independent claim, follows in accordance with 37 C.F.R. § 41.37(v).

Independent claim 1

In accordance with an exemplary, non-limiting embodiment of the present invention, there is provided a method, for example, such as that shown in sole figure, for managing radio links between at least one mobile station (MS-1, MS-2, MS-3) and a radio access network (RAN) of a communications network.

The method comprises detecting (detector module DM; Sole figure) whether a radio link interruption occurs which prevents said mobile station (MS-i) and said radio network controller (BSC) from communicating with each other via a radio link (described generally at least on page 5, line 35 to page 6 line 3);

in the event of an interruption being detected in the radio link between said mobile station (MS-i) and said radio access network (RAN), suspending said radio link and attempting to reactivate said radio link for a predetermined time interval (described generally at least on page 6, lines 12-16); and

if said radio link is not reactivated within the predetermined time interval, determining that said interruption is permanent (described generally at least on page 7, lines 5-6).

Independent claim 6

In accordance with an exemplary, non-limiting embodiment of the present invention, there is provided an apparatus, for example, such as the one shown in sole figure, for managing radio links between at least one mobile station (MS-i) and a radio network controller (BSC) of a radio access network (RAN) of a communications network, the apparatus comprising:

detector means (DM; sole figure) arranged to detect a radio link interruption which prevents said mobile station (MS-i) and said radio network controller (BSC) from communicating with each other via a radio link (described generally at least on page 6, lines 12-16); and

control means (CM; sole figure) arranged, in the event of said interruption being detected, to order said radio network controller (BSC) to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval (described generally at least on page 6, lines 12-16), and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval (described generally at least on page 7, lines 5-6).

Independent claim 11

In accordance with an exemplary, non-limiting embodiment of the present invention, there is provided a radio network controller (BSC) of a radio access network (RAN) of a communications network.

The controller comprises an apparatus for managing radio links between at least one mobile station (MS-i) and the radio network controller (BSC) (sole figure).

The apparatus comprises detector means (DM; sole figure) arranged to detect a radio link interruption which prevents a mobile station (MS-i) and said radio network controller (BSC) from communicating with each other via a radio link (described generally at least on page 6, lines 12-16), and

control means (CM; sole figure) arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, (described generally at least on page 6, lines 12-16) and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval (described generally at least on page 7, lines 5-6).

Independent claim 12

In accordance with an exemplary, non-limiting embodiment of the present invention, there is provided an equipment for a radio access network (RAN) of a communications network including at least one radio network controller (BSC) (sole figure).

The equipment comprises an apparatus for managing radio links between at least one mobile station (MS-i) and the radio network controller (RNC).

The apparatus comprises detector means (DM; sole figure) arranged to detect a radio link interruption which prevents a mobile station (MS-i) and said radio network controller (BSC) from communicating with each other via a radio link (described generally at least on page 6, lines 12-16), and

control means (CM; sole figure) arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, (described generally at least on page 6, lines 12-16) and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval (described generally at least on page 7, lines 5-6).

Independent claim 13:

In accordance with an exemplary, non-limiting embodiment of the present invention, there is provided a communications network comprising a radio access network (RAN) including at least one radio network controller (BSC) for managing radio links between at least one mobile station (MS-i) and the radio network controller (BSC).

The communication network comprises detector means (DM; sole figure) arranged to detect a radio link interruption which prevents a mobile station and said radio network controller (BSC) from communicating with each other via a radio link (described generally at least on page 6, lines 12-16), and control means (CM; sole figure) arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, (described generally at least on page 6, lines 12-16) and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval (described generally at least on page 7, lines 5-6).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues on appeal are summarized as follows:

1. Whether claims 1-13 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Buskens et al. (US Patent No. 6,215,782) in view of Moulsey et al. (US Patent No. 6,668,168).

2. Whether claims 5 and 10 are properly rejected under 35 U.S.C. § 103(a) as obvious over Buskens and Moulsey in view of Official Notice.

VII. ARGUMENT

A brief discussion of the references the Examiner cites in support of the claim rejection is present for the Boards convenience.

A. Applied References

Buskens

Buskens is directed to a method for reconnecting calls affected by a loss of synchronization. Buskens discloses a mobile terminal 135, a base station 122 and a mobile switching center 120 (FIG. 1). Buskens discloses that the reconnection process begins when base station 122 detects disconnect of the call (step 200 of FIG. 2; column 4, lines 21-23). The base station 122 selectively deploys the reconnection process thereafter. For instance, the base station 122 may immediately release call resources upon detection of disconnected during unusually heavy call volume. Otherwise, the base station begins a reconnection time-out sequence during which the base station 122 attempts to establish new air traffic channels to be used between base station and mobile terminal 135 while holding call resources associated with the interrupted call (FIG. 2 and column 4, lines 30-50).

Moulsey

Moulsey is directed to a radio communication system for enabling the control channels associated with a data channel transmitting packet data with a low duty cycle to be switched to a dormant state or interrupted entirely (Abstract). Moulsey discloses a primary station (BS) 100 and secondary station (MS) 110. Communication from BS 100 to MS 110 takes place on a

downlink frequency channel 122 and a communication from MS 110 to BS 100 takes place on a uplink frequency channel 124 (column 2, lines 35-38). A communication link is initiated by the MS 110 by transmitting a request 202 for resources on the uplink channel 124 and the BS 100 transmits an acknowledgement 204 on the downlink channel 122. After acknowledgement 204, two control channels are established, an uplink control channel 206 and downlink control channel 208 (column 2, lines 44-54).

Moulsey discloses a technique for low duty cycle traffic, in which uplink 206 and downlink 208 control channels enter a dormant state between transmissions of data packets 210. The dormant state is entered after time-out period after transmission of data packet if the transmitting station determines that no further data packets are currently available for transmission (FIG. 3; column 3, lines 15-17). When MS 110 has another data packet 210 to send, it transmits a re-activation request as part of the dormant channel and the normal control channels are re-activated (column 3, lines 37-39).

B. Rejection of claims 1-13 under 35 U.S.C. § 103(a) as being unpatentable over Buskens in view of Moulsey.

The Examiner rejects claims 1-13 under 35 U.S.C. § 103(a) as being unpatentable over Buskens in view of Moulsey. Appellant traverses the rejection for at least the following reasons.

Independent claims 1, 6, 11, 12 and 13

The Examiner asserts that Buskens discloses detecting whether a radio link interruption occurs which prevent the mobile station and radio network controlled from communicating with

each other via a radio link in column 4, lines 12-30. Moreover, the Examiner asserts that, in column 4, lines 30-50, Buskens allegedly discloses that, in the event of such an interruption being detected, to order said radio network controller (BSCn) to suspended said radio link between the module station and then attempting to reactivate said radio link. Also, the Examiner contends that column 6, lines 29-50 discloses if the radio link is not reactivated with in the predetermined time interval determining, the interruption is permanent.

In response to the Appellant's argument submitted with the request for reconsideration filed on July 30, 2007, that there is no motivation or suggestion to combine the references, the Examiner states that "the obviousness can only be established by combing or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art." See page 3 of the advisory action.

Appellant submits that it would not have been obvious to one of ordinary skill in the art the time the invention was made to combine the references for at least the following reasons.

Buskens is directed to a method for reconnecting calls in a wireless telecommunication systems by establishing a new air traffic channel when an involuntary disconnect has occurred between the mobile system and the base station (column 2, lines 20-31). On the other hand, Moulsey is directed to a method for improving low duty cycle traffic, by setting the uplink and downlink control channels into dormant state (column 3, lines 15-21). Appellant submits that it

is clear from above that Buskens and Moulsey are directed to solving different problems using different techniques.

For example, Moulsey proposes entering the uplink and downlink control channels into dormant state for the following reasons. Moulsey discloses that in the case of packet data having a low duty cycle, the maintaining of bidirectional control channels represent a significant overhead (column 1, lines 22-26). Moulsey discloses that there is significant overhead because, when the MS 110 transmits data packets 210 (DAT) with length period between them, during which periods signal significant resources are being used on both the uplink 124 and downlink 122 channel just to maintain control channels (column 3, lines 4-11). Therefore, by entering the uplink and downlink control channels into dormant state, in which no rate information is transmitted, the power control rate is reduced (column 3, lines 22-24).

On the other hand, Buskens, for example, discloses that the base station recognizes the disconnect to be involuntary because no formal call release message is recited and then tries to reconnect the call by establishing a new air traffic channel (column 4, lines 45-50).

In *In re Kotzab*, the Federal Circuit stated that

> The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. See Dembiczak , 175 F.3d at 999, 50 USPQ2d at 1617. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. See WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed.Cir. 1999). The test for an implicit showing is

> what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981) (and cases cited therein).[1]

Appellant submits that since Buskens and Moulsey are directed to solving different problems using different techniques, one of ordinary skill in the art would not have been motivated to combine the references as alleged by the Examiner.

Moreover, Appellant respectfully submits that the Examiner's motivation to combine the Buskens and Moulsey references does not appear proper. For instance, the Examiner asserts that "by combining the above teaching with Buskens, reducing the excessive overhead that control channels represent on a data channel using a small portion of the available channel capacity." See page 3, lines 9-11 of the advisory action.

Appellant respectfully submits that Moulsey discloses that **maintaining** a control channel when packet data has a low duty cycle (long durations between the transmissions of data) results in high overhead and therefore inefficient. (column 1, lines 18-26). Moreover, Moulsey discloses that by entering the control channels into dormant states when no data is transmitted, the power control rate can be reduced (column 3, lines 21-24). On the other hand, Buskens discloses that setting up a new channel when an involuntary disconnect of an old radio channel occurs. (column 4, lines 21-29). Therefore, modifying the system of Buskens by suspending and re-activating the channel would not reduce e the overhead cost of maintaining a channel because

[1] *In re Kozab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

the old radio cannel is dropped entirely. That is, Buskens discloses trying to establish a new air channels and does not disclose trying to maintain the old channel that has been interrupted and dropped. Thus, there would be not need for improving the overhead of the interrupted old radio link, by suspending and re-activating as asserted by the Examiner.

Appellant respectfully submits that independent claim 1 would not have been obvious under 35 U.S.C. § 103(a) because one of ordinary skill in the art would not have been motivated to combine Buskens and Moulsey to produce the claimed invention.

Furthermore, Appellant submits that even if, *assuming arguendo*, the Buskens and Moulsey were to be combined as alleged by the Examiner, the resulting method/system still would not disclose all the limitation of claim 1.

For example, claim 1 recites, *inter alia*, "in the event of an interruption being detected in the radio link between said mobile station and said radio access network, suspending said radio link and attempting to reactivate said radio link for a predetermined time interval." Buskens discloses establishing new air traffic control when there is an involuntary disconnect (column 4, lines 21-50). Moulsey discloses that when no more data packets remain to be transmitted and first time-out period has met, entering the control channels in to dormant state (column 4, lines 30-34), and if data packets are waiting for transmission, then re-establishing the control channels (column 4, lines 35-38). Accordingly, neither Buskens nor Moulsey discloses "in the event of an interruption being detected...suspending said radio link and attempting to reactivate said radio link", as recited in claim 1. That is, considering what claim 1 requires **as a whole** and what each

reference teaches or suggests to those of ordinary skill in the art, rather than merely choosing and picking particular elements from the prior art, Moulsey and Buskens do not teach all the features and limitations of claim 1.

With regard to claims 6 and 11-13, Appellant submits that they recite features substantially the same as those discusses above with regard to claim 1, except in apparatus form, and therefore are allowable at least for the same or similar reasons claim 1 is allowable.

With regards to claims 2-4 and 7-9, Appellant submits that since they depend from one of the independent claims, they are allowable at least by virtue of their dependency.

C. Rejection of claims 5 and 10 under 35 U.S.C. § 103(a) as obvious over Buskens and Moulsey in view of Official Notice.

It is the Appellant's position that the rejection of claims 5 and 10 under 35 U.S.C. § 103(a) as being obvious over Buskens and Moulsey in view of the Official notice is improper.

In the Final Office Action dated April 30, 2007, the Examiner admits that Buskens modified by Moulsey does not teach that the control means are arranged to draw up said time table on the basis of statistical results obtained in said communication network and relating to the duration of said interruption detected by said detector means. However, the Examiner takes Official Notice that such features are allegedly well known in the art. Furthermore, the Examiner asserts that it would have been obvious to ordinary skill in the art at the time the invention was made to combine the above teaching with Buskens modified by Moulsey, in order to provide service quality report for the purpose of improving the performance of the system.

(see page 4 of the April 30, 2007 Final Office Action). Appellant disagrees with the Examiner for the following reasons.

First, Appellant respectfully submits that Buskens does not disclose or suggest using quality service reports for improving performance. In fact, usage of such reports would have no use because Buskens does not try to suspend radio connection but establish new connection. Therefore, it would not have been obvious to one of ordinary skill in the art to modify the teachings of Buskens to include control means are arranged to draw up said time table on the basis of statistical results obtained in said communication network and relating to the duration of said interruption detected by said detector means as asserted by the Examiner.

Second, Appellant submits that the Examiner has not satisfied the burden of supporting the use of Official Notice with cogent technical reasoning.

For example, MPEP section 2144.03 states that

> Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are **capable of instant and unquestionable demonstration as being well-known**. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing In re Knapp Monarch Co., 296 F.2d 230, 132 USPQ 6 (CCPA 1961)).

Appellant submits that since the phrase "improving the performance of the system" used by the Examiner is a very general statement and since the Examiner does not provide any reasons

how and why the modification as asserted by the Examiner would improve the performance, the Examiner does not satisfy the burden of supporting the use of the Official Notice as required.

D. Conclusion

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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CLAIMS APPENDIX

CLAIMS 1-13 ON APPEAL:

1. A method of managing radio links between at least one mobile station and a radio access network of a communications network, the method comprising:

detecting whether a radio link interruption occurs which prevents said mobile station and said radio network controller from communicating with each other via a radio link;

in the event of an interruption being detected in the radio link between said mobile station and said radio access network, suspending said radio link and attempting to reactivate said radio link for a predetermined time interval; and

if said radio link is not reactivated within the predetermined time interval, determining that said interruption is permanent.

2. The method according to claim 1, wherein an attempt is made to reactivate said radio link after each detection of an interruption.

3. The method according to claim 1, wherein attempts are made to reactivate said radio link in application of a selected timetable over said predetermined time interval.

4. The method according to claim 3, wherein said timetable is of the periodic type.

5. The method according to claim 3, wherein said timetable is drawn up on the basis of statistical results obtained in said communications network and relating to the durations of said detected interruptions.

6. An apparatus for managing radio links between at least one mobile station and a radio network controller of a radio access network of a communications network, the apparatus comprising:

detector means arranged to detect a radio link interruption which prevents said mobile station and said radio network controller from communicating with each other via a radio link; and

control means arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval.

7. The apparatus according to claim 6, wherein said control means are arranged to order said radio network controller to attempt to reactivate said radio link after each detection of an interruption signaled by said detector means.

8. The apparatus according to claim 6, wherein said control means are arranged to order said radio network controller to attempt to reactivate said radio link in application of ~~said~~ a selected timetable during said predetermined time interval.

9. The apparatus according to claim 8, wherein said timetable is of the periodic type.

10. The apparatus according to claim 8, wherein said control means are arranged to draw up said timetable on the basis of statistical results obtained in said communications network and relating to the durations of said interruptions detected by said detector means.

11. A radio network controller of a radio access network of a communications network, the controller comprising an apparatus for managing radio links between at least one mobile station and the radio network controller, the apparatus comprising detector means arranged to detect a radio link interruption which prevents a mobile station and said radio network controller from communicating with each other via a radio link, and control means arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval.

12. Equipment for a radio access network of a communications network including at least one radio network controller , the equipment comprising an apparatus for managing radio links between at least one mobile station and the radio network controller, the apparatus comprising detector means arranged to detect a radio link interruption which prevents a mobile station and said radio network controller from communicating with each other via a radio link, and control means arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval.

13. A communications network comprising a radio access network (RAN) including at least one radio network controller (BSCn) for managing radio links between at least one mobile station and the radio network controller, the apparatus comprising detector means arranged to detect a radio link interruption which prevents a mobile station and said radio network controller from communicating with each other via a radio link, and control means arranged, in the event of said interruption being detected, to order said radio network controller to suspend said radio link, and then to attempt to reactivate said radio link for a predetermined time interval, and determine that said interruption is permanent if said radio link is not reactivated within said predetermined time interval.

EVIDENCE APPENDIX:

There is no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the Appeal.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.